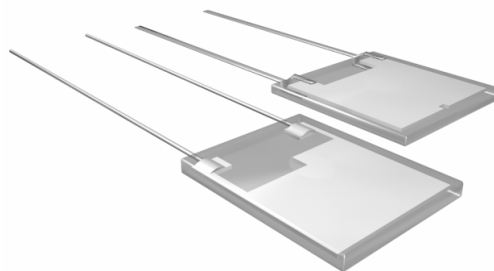


## Thin-film Humidity Sensing Element SH

- ◆ Low cost
- ◆ Wide T/RH operating zone
- ◆ Operating temperature up to 200 °C
- ◆ Excellent sensibility
- ◆ Very good dynamic properties
- ◆ Short response time
- ◆ Long-term stability

The SH relative humidity sensing element consists of a system of electrodes on a glass-ceramic substrate, covered by a humidity-sensitive polymer coating and a water-vapor permeable metallic membrane. This coating system represents a humidity-dependent capacitor. Utilizing the principal of capacitive measurement, SH measures relative humidity in air or other non-aggressive gases and gas mixtures with good long-term stability and linearity, small hysteresis, and excellent dynamic response.



### Technical specifications

Variant	1	2	3
<b>Specifications</b>			
<b>Working zone</b>			
<b>Measurement range</b>	0... 100 %RH		
<b>Operating temperature</b>	-60...200 °C; with protective cap (option) <sup>(1)</sup> : -40...120 °C		
<b>Temperature dependence</b>	RH' = [RH + a*(T-25)]*(b <sub>0</sub> +b <sub>1</sub> *T+b <sub>2</sub> *T <sup>2</sup> ), where: a = 0.04 for T ≥ 25 °C, 0 for T < 25 °C; b <sub>0</sub> = 0.98; b <sub>1</sub> = 6x10 <sup>-4</sup> ; b <sub>2</sub> = 6x10 <sup>-6</sup>		
<b>Permissible voltage</b>	max. 3 VAC (no DC voltage allowed!)		
<b>Nominal capacitance</b>	115 ± 15 pF at 20 °C	135 ± 10 pF at 20 °C	1050 ± 50 pF at 20 °C
<b>Sensitivity</b>	0.25 pF / %RH	0.35 pF / %RH	2.5 pF / %RH
<b>Non-linearity</b>	< 1.5% at 5...95 %RH	< 1.5% at 5...95 %RH	< 1.5% at 5...95 %RH
<b>Hysteresis</b>	< 1.5 %RH at 5...95 %RH	< 1.5 %RH at 5...95 %RH	< 1.5 %RH at 5...95 %RH
<b>Long-term stability</b>	< 1 %RH per year	< 1 %RH per year	< 1.5 %RH per year
<b>Response time</b>	< 10 s	< 10 s	< 10 s
<b>Loss factor</b>	< 0.03 at 10 kHz	< 0.03 at 10 kHz	< 0.03 at 10 kHz
<b>Operating frequency</b>	30...300 kHz	30...300 kHz	30...300 kHz
<b>Application</b>	climate control, handheld meters, humidifiers, dehumidifiers, HVAC and industrial applications, high-temperature applications		

<sup>(1)</sup> Available only for variant '2'

### Ordering code SH\* - #1

Code	Feature or option	Code values
*	Variant	1, 2, 3
#1	Protective cap <sup>(1)</sup>	X - none, P - plastic protective cap